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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,425

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Armando Annunziato

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EXAMINER

CHAMBERS, TANGELA T

ART UNIT

PAPER NUMBER

2617

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,425	Applicant(s) ANNUNZIATO ET AL.	
	Examiner TANGELA T. CHAMBERS	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the preliminary amendment filed on 12/14/2005.
2. Claims 1-26 have been canceled.
3. Claims 27-52 have been added.
4. Claims 27-52 are pending.

Priority

5. Acknowledgment is made of applicant's claim for domestic priority which provides a priority date of June 17, 2003.

Drawings

6. **The drawings are objected to because of the following informalities:**

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because FIG. 1, FIG. 3 and FIG. 4, do not contain any text. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

7. **The disclosure is objected to because of the following informalities:**

Page 2, line 25 recites the acronym "GSM". The first occurrence of the acronym "GSM" should be spelled out with the acronym appearing in parenthesis.

Page 2, line 26 recites the acronym "UMTS". The first occurrence of the acronym "UMTS" should be spelled out with the acronym appearing in parenthesis.

Throughout the disclosure the word 'summarised' should be replaced with the following spelling – summarized –.

Page 11, line 1 and page 16, line 26 recite the word "travelled" which appears to be a misspelling of the word "traveled".

Page 13, line 32 recites the acronym "SMS". The first occurrence of the acronym "SMS" should be spelled out with the acronym appearing in parenthesis.

Page 13, line 33 recites the acronym "GPRS". The first occurrence of the acronym "GPRS" should be spelled out with the acronym appearing in parenthesis.

Appropriate corrections are required.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27 and 34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Although claims 27 and 34 are method claims, they are non-statutory because they do not produce a useful, concrete and tangible result, and are therefore not eligible for patent protection.

Claims 28-33 and 51 are dependant on claim 27, and are rejected under the same reason set forth in connection of the rejection of claim 27.

Claims 35, 43-44 and 50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 35 and 43 are non-statutory because they do not produce a useful, concrete and tangible result, and are therefore not eligible for patent protection.

Claims 36-42 are dependant on claim 35, and are rejected under the same reason set forth in connection of the rejection of claim 35.

Claims 45-48 and 52 are dependant on claim 44, and are rejected under the same reason set forth in connection of the rejection of claim 44.

Claim Rejections - 35 USC § 112 Second Paragraph

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 27, 34-35 and 43 recite the limitation "the location coordinates". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27-47 and 49-51 are rejected under 35 U.S.C. 102(e) as being unpatentable over Riley et al (Riley) (US Patent Publication No. 2003/0125046 A1) in view of McBurney et al (McBurney) (US Patent No. 6,055,477 A).

As per claims 27-28, 35-36 and 44-45, Riley discloses:

- ***A method for determining the location coordinates of a mobile terminal with respect to a set of reference elements adapted to send toward said mobile terminal radioelectric signals***, (Riley, Page 1, Paragraphs [0005]-[0007]), Riley teaches a mobile terminal using reference elements to calculate its position.
- ***measuring said radioelectric signals to derive respective measurements***, (Riley, Pages 2-3, Paragraph [0028]).
- ***said measurements being affected by measurement errors***; (Riley, Page 7, Paragraph [0081]), Riley teaches measurements being affected by errors.
- ***subjecting such measurements to state-based statistical filtering to derive therefrom said location coordinates***; (Riley, Page 2, Paragraph [0015], "After collection of multiple measurements upon the base station from one or more mobile stations from several different known locations, these measurements are used as input to a conventional position and time offset computation procedure, such as least

squares, or a Kalman filter, as is commonly understood in the art of navigation (e.g., GPS and AFLT).”).

- ***selecting at least part of said set reference elements as terrestrial reference elements;*** (Riley, Page 1, Paragraph [0005] and Page 2, Paragraph [0015], “If the position and timing offset of the mobile station is determined from global position satellites or from a number of quality signals from base stations having known positions and timing offsets, then it is possible for the position and timing offset of the mobile station to be quite precise, often to approximately meter and nanosecond level accuracy.”).

Riley does not specifically disclose:

- ***providing in said statistical filtering at least one further state in addition to said coordinates, said at least one further state being representative of said measurement errors,*** However, McBurney in an analogous art discloses the above limitation. (McBurney, Abstract).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of McBurney into the teaching of Riley to provide measurement errors in addition to coordinates in performing statistical filtering. The modification would be obvious because one of ordinary skill in the art would want the benefit of achieving an integration of measurements to provide better accuracy of two-dimensional and/or three-dimensional location coordinates than with one instrument’s location coordinate(s) alone. (McBurney, Column 7, Lines 52-59).

As per claim 29, 37 and 46, Riley further discloses:

- ***associating with said respective measurements at least one additional measurement indicative of at least one of the location and displacement of said mobile terminal,*** (Riley, Page 1, Paragraph [0005] and Pages 2-3, Paragraph [0028], “The CDMA network is capable of locating the position of the AFLT mobile station 22 and the hybrid mobile station 23 using the well-known AFLT technique of the mobile

station measuring the time of arrival of so-called pilot radio signals from the base stations.”)

As per claim 30, 38 and 47, McBurney further discloses:

- ***measuring an altitude coordinate of said mobile terminal***, (McBurney, Abstract and Column 7, Line 60 – Column 8, Line 24, “An altimeter, barometer or other altitude sensor can provide altitude or elevation information that is accurate to within 10-20 meters, depending upon the time elapsed since the last calibration, the quality of the last calibration and the local rate of change of barometric pressure.”).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of McBurney into the teaching of Riley to measure an altitude coordinate of a mobile terminal. The modification would be obvious because one of ordinary skill in the art would want the benefit of achieving an integration of measurements to provide better accuracy of two-dimensional and/or three-dimensional location coordinates than with one instrument’s location coordinate(s) alone. (McBurney, Column 7, Lines 52-59).

As per claim 31 and 39, Riley further discloses:

- ***including in said set of reference elements at least one satellite of a satellite-based positioning system***, (Riley, Page 3, Paragraph [0030]).

As per claim 32, 40 and 49, Riley further discloses:

- ***wherein measuring said radioelectric signals comprises the step of determining at least one parameter selected from the group consisting of: power received at said mobile terminal from said set of reference elements, timing advance, round trip time, observed time differences, and observed time differences of arrival***, (Riley, Page 2, Paragraph [0026] and Page 4, Paragraph [0042]), Riley teaches measuring radio-electric signals to determine the observed time

differences.

As per claim 33 and 41, Riley further discloses:

- ***selecting at least part of said set of reference elements as elements comprising, together with said mobile terminal, a terrestrial cellular communication system***, (Riley, Fig. 1 and Page 2, Paragraphs [0025]-[0026], “FIG. 1 shows a CDMA cellular telephone network using a GPS system for locating mobile telephone units and calibrating base stations.”).

As per claims 34, 43 and 50, they are rejected under the same reasons set forth in connection of the rejections of claims 27 and 31.

As per claim 42, Riley further discloses:

- ***wherein at least one of said measurement module and said processing module includes a first portion hosted by said mobile terminal and a second portion hosted by a location center, wherein said first and second portions are arranged for data exchange over said terrestrial cellular communication system***, (Riley, Page 3, Paragraph [0031], “A mobile positioning center (MPC) 36 is connected to mobile switching center (MSC) 34. The MPC 36 manages position location applications and interfaces location data to external data networks through an interworking function (IWF) 37 and a data network link 38.”).

As per claim 51, it is rejected under the same reasons set forth in connection of the rejections of claims 27 – 34.

Claims 48 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley et al (Riley) (US Patent Publication No. 2003/0125046 A1) in view of McBurney et al (McBurney) (US Patent No. 6,055,477 A) and in further view of Hoshino et al (Hoshino) (US Patent No. 6,081,230 A).

As per claim 48, neither Riley nor McBurney specifically discloses:

- ***wherein the terminal is mounted on a vehicle, and said at least one additional measurement is indicative of at least one of the location and displacement of said vehicle,*** However, Hoshino in an analogous art discloses the above limitation. (Hoshino, Fig. 11 and Column 27, Lines 35-45).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hoshino into the teaching of Riley to have the terminal mounted on a vehicle to indicate location and displacement of the vehicle. The modification would be obvious because one of ordinary skill in the art would want the benefit of achieving a navigation system which enhances positioning accuracy without employing any sensor of high precision. (Hoshino, Column 5, Lines 20-53).

As per claim 52, it is rejected under the same reasons set forth in connection of the rejections of claims 44 – 50.

Conclusion

12. The prior art not relied upon but considered pertinent to applicant's disclosure is made of record and listed on form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANGELA T. CHAMBERS whose telephone number is 571-270-3168. The examiner can normally be reached Monday through Thursday, 9:00am-6:30pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro, can be reached at 571-272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-270-4168.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tangela T. Chambers
Patent Examiner
Art Unit 2617
July 7, 2008

/Nick Corsaro/
Supervisory Patent Examiner, Art Unit 2617